

Computing Technology

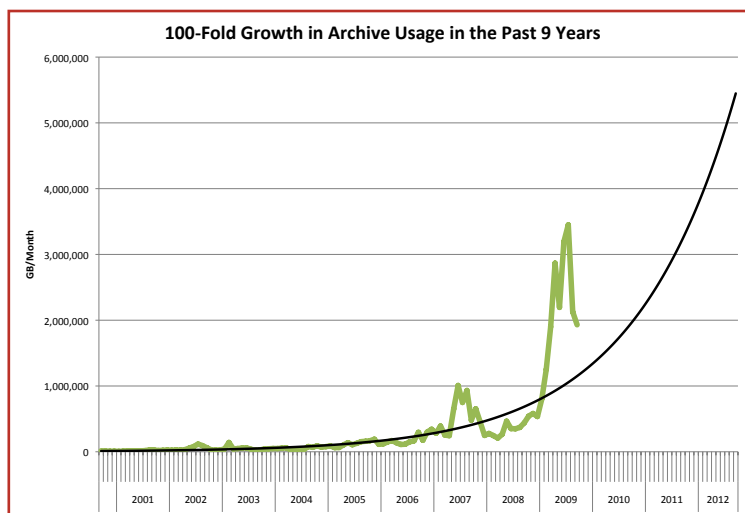
NAS Silo, Tape Drive, and Storage Upgrades

Since deployment of the Pleiades supercomputer at the NASA Advanced Supercomputing (NAS) facility at Ames Research Center in November 2008, peak teraflops has increased 10-fold over peak capability provided by the Columbia supercomputer installed in 2004. This dramatic increase in computing puts extra demands on the archive and storage infrastructure at NAS.

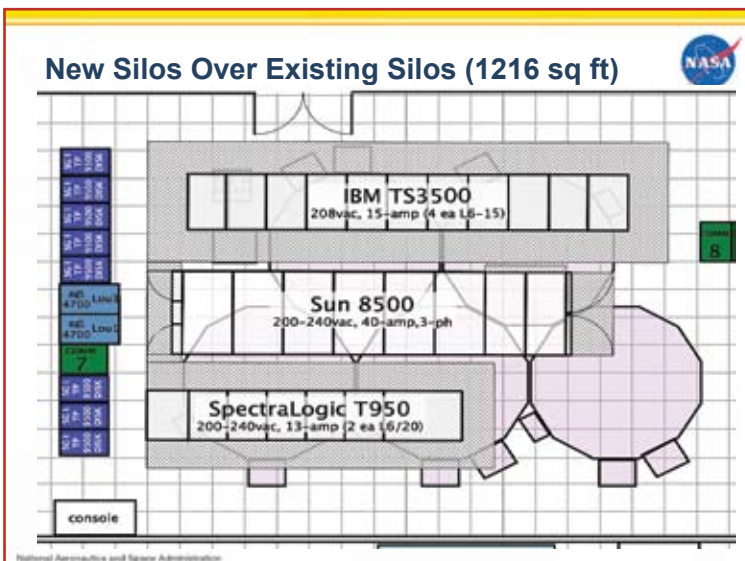
To address these additional demands, and to identify a replacement for the aging (20-year-old) tape silo, NAS has evaluated three different tape library vendors and tape drive technologies, comparing various features and cost to arrive at the overall best value. After an extensive evaluation process, NAS selected Spectra Logic's tape library, which has double the tape slot density of the previous generation STK silo.

In addition, over 3 petabytes of DataDirect Networks RAID expansion was needed to accommodate both Pleiades and the archive systems, providing an overall peak bandwidth of 40 gigabytes per second.

The new tape drive, library, and storage upgrades being made at the NAS facility help support all NASA mission directorates by facilitating use of Pleiades, the archive system, and the hyperwall-2 visualization system. In addition, the upgrades will reduce archive operational cost by 50 percent.



Since 2001 there has been a 100-fold increase in yearly archive usage (green line). The trend line (black) projects another 4.5-fold increase over the next three years.



The Spectra Logic tape library has double the tape slot density of the previous generation STK silo. In addition, the Spectra Logic tape library has the best tape slot density compared to other tape library vendors.